UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20196

OFFICE OF CHEMICAL SAFETY AND
POLLUTION PREVENTION

OFFICE OF PESTICIDE PROGRAMS
REGISTRATION DIVISION (7505P)

24/APR/2014

MEMORANDUM

Subject: Acute Toxicity Review for EPA File Symbol 81598-RR

Name of Pesticide Product:	Emamectin Benzoate Technical
EPA Reg. No.:	81598-RR
DP Barcode:	D415679
Decision No.:	483286
Action Code:	R334
PC Code:	122806 (emamectin benzoate)

From: Eugenia McAndrew, Biologist
Technical Review Branch
Registration Division (7505P)

E. McAndrew M Ashley Team Leader - TOX

To: Thomas Harris, RM Team 07
Insecticide-Rodenticide Branch
Registration Division (7505P)

Applicant: Rotam Limited
c/o Wagner Regulatory Associates
P.O. Box 640
7217 Lancaster Pike, Suite A
Hockessin, DE 19707

FORMULATION FROM LABEL:

Active Ingredient(s):	% by wt.
Emamectin benzoate	95.9
Other Ingredient(s):	4.1
Total:	100.0%

ACTION REQUESTED: The Risk Manager requests a review of six acute toxicity studies submitted to support the registration of EPA File Symbol 81598-RR.

BACKGROUND: Rotam Limited has submitted six acute toxicity studies with MRIDs 492123-07 to -12 for Emamectin Benzoate Technical, EPA File Symbol 81598-RR. The submission includes a basic CSF which must be reviewed and accepted by the TRB Product Chemistry Team.

GLP: Yes

DEVIATIONS: One minor deviation in the acute oral toxicity study (49212307) is described in the DER.

LABELING:

PRODUCT ID #: 081598-00011

PRODUCT NAME: Emamectin Benzoate Technical

PRECAUTIONARY STATEMENTS

SIGNAL WORD: DANGER

Hazards to Humans and Domestic Animals:

Corrosive. Causes irreversible eye damage. May be fatal if swallowed. Harmful if absorbed through skin or inhaled. Avoid breathing dust. Do not get in eyes or on clothing. Avoid contact with skin. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse. Wear protective eyewear (goggles, face shield, or safety glasses).

First Aid:

If in eyes:
-Hold eye open and rinse slowly and gently with water for 15-20 minutes.
-Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.
-Call a poison control center or doctor for treatment advice.

If swallowed:
-Call a poison control center or doctor immediately for treatment advice.
-Have person sip a glass of water if able to swallow.
-Do not induce vomiting unless told to by a poison control center or doctor.
-Do not give anything to an unconscious person.

If on skin:
-Take off contaminated clothing.
-Rinse skin immediately with plenty of water for 15-20 minutes.
-Call a poison control center or doctor for treatment advice.

If inhaled:
-Move the person to fresh air.
-If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.
-Call a poison control center or doctor for further treatment advice.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-xxx-xxxx for emergency medical treatment information.

Note: The Worker Protection Standard does not apply to manufacturing use products.

DATA EVALUATION RECORD

Product Reg. No.: 81598-RR
Product Name: Emamectin Benzoate Technical

1. DP BARCODE: 415679				
2. PC CODE: 122806				
3. CURRENT DATE: April 24, 2014				
4. TEST MATERIAL: Emamectin Benzoate Technical (Batch # 20120806011; 956.0 g/kg emamectin benzoate; pH 5.9; density 0.9608 g/mL; off-white crystalline powder)				
Study/Species/Lab Study # /Date	**MRID**	**Results**	**Tox Cat**	**Core Grade**
Acute oral toxicity / rat Sanctuary for Research and Development (SA-FORD), Maharashtra, India Study #12_01_046/January 25, 2013 OCSPP 870.1100; OECD 425	49212307	LD_{50} Females = 151 mg/kg The test item was dissolved in distilled water. Deviation: The study report did not state what values were used for the assumed LD_{50} and the assumed sigma in the AOT 425 Stat Program. The assumed LD_{50} value is calculated to be 55 and the assumed sigma 0.25. Using these values, the doses recommended by the 425 Stat Program are 31, 55, 98 and 174 which differ slightly from the doses used in the study. This deviation did not affect the outcome of the study. 7 animals tested at 31 (1 animal), 55 (1 animal), 99 (3 animals) or 175 (2 animals) mg/kg Mortality at 175 mg/kg only: 1 animal was found dead on day1 and the second was found moribund and sacrificed on day 7 Toxic signs noted: lethargy, nasal discharge, lateral recumbency, tremors, salivation; gross necropsy showed wet mouth and nostrils, congestion in lungs, emaciation and/or empty stomach	II	A

		31, 55 and 99 mg/kg: no clinical signs; body weight gains; no gross abnormalities at necropsy		
Acute dermal toxicity / rat Sanctuary for Research and Development (SA-FORD), Maharashtra, India Study #12_01_047/January 25, 2013 OCSPP 870.1200; OECD 402	49212308	LD_{50} = 2167 mg/kg (both sexes) Test item was moistened with distilled water. 3 groups of 5 males and 5 females tested at 1000, 1500 or 2000 mg/kg Mortality: 2 males and 2 females at 2000 mg/kg dose found dead on day 2 Clinical signs: 2000 mg/kg: lethargy, tremors, lateral recumbency and/or salivation noted in decedents prior to death; tremors, lethargy, noted in all survivors with recovery by day 12 1500 mg/kg: tremors noted in 5/10 rats with recovery by day 8; hyperactivity noted in 1 male on day 2 1000 mg/kg: tremors noted in 1 male on days 6-10 Bodyweight losses noted at all dose levels Gross necropsy: wet mouth in 3/10 rats at 2000 mg/kg; lung and intestine congestion in decedents at 2000 mg/kg LD_{50} was calculated using Staplus 2009 Professional statistical software by probit analysis - Finney method	III	A

Acute inhalation toxicity / rat Sanctuary for Research and Development (SA-FORD), Maharashtra, India Study #12_01_048/February 4, 2013 OCSPP 870.1300; OECD 403	49212309	LC_{50} > 1.52 mg/L (both sexes) MMAD: 3.13 µm GSD: 2.71 6 animals tested at limit dose (OECD Guideline 403) All animals survived; no clinical signs; 2 males lost weight throughout the study, the other 4 had modest weight gains; no gross abnormalities at necropsy	III	A
Primary eye irritation / rabbit Sanctuary for Research and Development (SA-FORD), Maharashtra, India Study #12_01_050/February 4, 2013 OCSPP 870.2400; OECD 405	49212310	1 female tested pH 6.8 100 mg of pulverized test item was instilled Corneal opacity with score of 3 was observed at 24 hrs persisting through the end of the study on day 21, conjunctival redness with score of 3 was also noted from 24 hrs through day 21, chemosis with score of 4 was observed from 24 hrs through day 14 Note: iris reactions could not be scored due to opacity The following anesthetics were used before and up to 32 hrs after the instillation: buprenorphine, proparacaine hydrochloride, meloxicam	I	A
Primary dermal irritation / rabbit Sanctuary for Research and Development (SA-FORD), Maharashtra, India Study #12_01_049/January 25, 2013 OCSPP 870.2500; OECD 404	49212311	PDI = 0.0 pH 6.1 The test item was moistened with distilled water. 3 males tested No irritation observed	IV	A

Dermal sensitization /guinea pig Sanctuary for Research and Development (SA-FORD), Maharashtra, India Study #12_01_051/January 25, 2013 OCSPP 870.2600; OECD 406	49212312	Is *not* a sensitizer Appropriate positive control provided	--	A

Core Grade Key: A =Acceptable, S = Supplementary, U = Unacceptable, D = Data Gap W = Waived